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ABSTRACT

Validation studies were conducted on nine revised aptitude areas of the Army Classification Battery (ACB) to determine whether ACB scores provided an equitable indication of the qualifications of blacks and whites for training in major groups of Army jobs. The aptitude areas were: combat, field artillery, electronics repair, operators and food, surveillance and communications, mechanical maintenance, general maintenance, clerical, and skilled technical. The validity of these aptitude scores was compared by a three-step analysis, to job training scores (final course grades) for 12,355 whites and 1,772 blacks. (1) Comparison of ACB scores of whites and blacks showed sizeable differences. (2) Aptitude area scores correlated highly with counterpart training scores for both races. (3) For six of the eight major job areas, both white and black trainees were selected appropriately for their job categories. It was concluded that the scores were valid enough to justify their uses in identifying more effective personnel; furthermore, a regression analysis indicated that ACB scores have equivalent meaning for both races.
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DIFFERENTIAL VALIDITY OF THE ARMY APTITUDE AREAS FOR PREDICTING ARMY JOB TRAINING PERFORMANCE OF BLACKS AND WHITES

Milton H. Maier and Edmund F. Fuchs

PERSONNEL ACCESSION AND UTILIZATION TECHNICAL AREA

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U. S. Army
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September 1978

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A Field Operating Agency under the Jurisdiction of the Deputy Chief of Staff for Personnel

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Aptitude area scores of the Army Classification Battery (ACB) are part of the Army selection and classification procedure to determine which applicants for enlistment are accepted and which Army job training programs are open to them. The validity of the current aptitude area measures were assessed by a step-by-step analysis comparing aptitude area scores and job training scores (final course grades) for 12,355 whites and 1,772 blacks. Results showed that aptitude area scores correlated highly with training scores for

20. Abstract (continued)
both blacks and whites. For six of the eight major job areas for which white-black identification was available, both white and black trainees were selected appropriately for their job categories.

Technical Paper 312

DIFFERENTIAL VALIDITY OF THE ARMY APTITUDE AREAS FOR PREDICTING ARMY JOB TRAINING PERFORMANCE OF BLACKS AND WHITES

Milton H. Maier and Edmund F. Fuchs

PERSONNEL ACCESSION AND UTILIZATION TECHNICAL AREA

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FOREWORD

The Personnel Accession and Utilization Technical Area of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) applies psychological measurement methods to enable the Army to make best use of the skills and aptitudes of both enlisted and officer personnel, through increasingly accurate and differentiated measures of individual potential. Research on enlisted accession measures included maintaining and improving the effectiveness of the Army Classification Battery (ACB) and its Department of Defense successor, the Armed Services Vocational Aptitude Battery (ASVAB).

Research continues on the conditions that may interact with classification tests and thus affect the basis for classifying incoming enlisted personnel. Previous research establishing the validity of the ACB has been reported in ARI Technical Paper 239 and ARI Research Reports 1177 and 1179. The present report demonstrates the validity of ACB aptitude area scores in predicting job training success for both blacks and whites.

The research was responsive to special requirements of the Deputy Chief of Staff for Personnel and the objectives of Army Project 2Q762717A766, "Manpower Systems Management."

Joseph Zeidner

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Technical Director

DIFFERENTIAL VALIDITY OF THE ARMY APTITUDE AREAS FOR PREDICTING ARMY JOB TRAINING PERFORMANCE OF BLACKS AND WHITES

BRIEF

Requirement:

To determine whether scores on the aptitude area battery introduced in the Army in 1973 provide an equitable basis for qualification of whites and blacks for training in major groups of Army jobs.

Procedure:

A step-by-step analysis was conducted. The first step indicated that there were significant aptitude area score differences in the two racial groups. Mean aptitude area scores were higher for whites than for blacks in each aptitude area, although major overlapping of scores characterized the distributions. In a second step, correlation coefficients between aptitude scores and training scores in counterpart job areas were found to be unusually high (.45 to .70), thus justifying use of the aptitude area scores as qualifiers for job training. The final step was to analyze the relation of training performance to aptitude area scores within job areas, to determine whether the relation was reasonably similar across the two racial groups. The sample consisted of 14,127 trainees--12,355 whites and 1,772 blacks. Criterion data were final course grades in training in eight major job areas.

Findings:

Prediction of training performance and trend lines for whites and blacks were in close agreement. Although some of the differences in prediction are probably of statistical significance in view of the large samples, regression of job training measures on the aptitude area scores of selection indicated no differences of practical significance within the critical score range for whites and blacks. For six of the eight job areas examined for which white-black identification was available, aptitude scores and final course grades for blacks and whites showed only slight differences. In the Combat job area, scores by blacks were higher than expected from the predicted scores of 90 and 100; in the Mechanical Maintenance and Skilled Technical areas, final course grades for whites were better than predicted by respective aptitude area scores of 110 and 120.

Utilization of Findings:

For six of the eight major job areas, both white and black trainees were selected by tne appropriate aptitude area composite. For Combat and Skilled Technical job areas, a second look at the selection basis and process in the light of current conditions may be helpful.

DIFFERENTIAL VALIDITY OF THE ARMY APTITUDE AREAS FOR PREDICTING ARMY JOB TRAINING PERFORMANCE OF BLACKS AND WHITES

CONTENTS

	Page
BACKGROUND	1
PROBLEM	1
METHOD	2
Research Model	3
Data	3
Analysis	5
DISCUSSION	13
REFERENCES	15
DISTRIBUTION	17

LIST OF TABLES

Table 1.	Tests in the Army Classification Battery (ACB-73)	2
2.	Aptitude areas and related Army jobs	4
3.	Aptitude area mean scores of whites and blacks in 1973 input sample	6
4.	Validity of aptitude areas for counterpart Army jobs	7
5.	Sample sizes in aptitude area validation and racial studies	8
6.	Mean aptitude area scores and final course grades of whites and blacks by MOS group	9
7.	Final course grades for given aptitude area scores from regression lines for whites and blacks	10

LIST OF FIGURES

Figure 1.	Comparative trends of course grades of whites and blacks for aptitude scores	11

DIFFERENTIAL VALIDITY OF THE ARMY APTITUDE AREAS FOR PREDICTING ARMY JOB TRAINING PERFORMANCE OF BLACKS AND WHITES

BACKGROUND

For many years the U.S. Army has officially been concerned with fair treatment of all racial groups. The Army moved to end racial segregation of housing and other military facilities in the early 1950's. A special concern of Army research scientists and personnel officials has been the racial fairness of the selection and classification procedures that determine which applicants for enlistment are accepted and which Army job training programs are open to them.

Since the end of the Korean War, the Army has recognized the need to tie selection standards to classification standards. Many problems arose when men passed service screening standards for acceptance but failed to meet classification standards for available job training. The primary test involved in screening has been the Armed Forces Qualification Test (AFQT). Screening standards have capitalized on the high relation of AFQT percentile scores to qualification for job training through the aptitude area scores of the Army Classification Battery (ACB). Individuals with Army standard scores of 90 or more qualify for job training. The high relation found between AFQT scores and number of aptitude areas in which individuals qualified (Maier & Fuchs, 1972b) made possible simplified standards based primarily on the AFQT. Persons scoring at 31 or above (to 100) on AFQT were almost certain to have several qualifying aptitude area scores and could be accepted as meeting mental standards on the basis of their AFQT scores. Similarly, those scoring from 0 to 9 on AFQT were almost certain to have no dependable qualifying aptitude area scores and could be rejected on that basis. Those with AFQT scores from 10 to 30 were better evaluated by getting their aptitude area scores and basing qualification on those scores.

Thus, although the primary mental qualification test for Army enlistment has been the AFQT, the real basis for screening has been the set of aptitude area classification measures. This relation has been more evident since 1973, when all enlistment applicants began taking the ACB before their enlistment eligibility was evaluated.

PROBLEM

In 1973, the Army introduced a new battery of mental tests as the new Army Classification Battery (ACB-73) with a revised set of composites as the new aptitude areas. The tests in the new ACB and their symbols are shown in Table 1. The names of the new aptitude areas and their symbols are shown in Table 2, together with the ACB tests making up the aptitude area composites and the major Army job groups associated with each aptitude

area. The aptitude areas were developed to provide maximum absolute validity rather than differentiation. Hence, there are many tests to an aptitude area and rather high intercorrelation among areas. The major purpose of the present analysis was to assess the racial fairness of the new aptitude areas as qualifiers for Army job training. Earlier research (Maier & Fuchs, 1973) had established the fairness of the previous measures.

Table 1

Tests in the Army Classification Battery (ACB-73)

Category	Test title	Test symbol
General Ability Tests	Arithmetic Reasoning	AR
	General Information	GI
	Mathematics Knowledge	MK
	Science Knowledge	SK
	Word Knowledge	WK
Mechanical Ability Tests	Automotive Information	AI
	Electronics Information	EI
	Mechanical Comprehension	MC
	Trade Information	TI
Perceptual Ability Tests	Attention to Detail	AD
	Pattern Analysis	PA
Classification Inventory	Attentiveness Scale	CA
	Combat Scale	CC
	Electronics Scale	CE
	Maintenance Scale	CM

METHOD

Validation studies in the Army since World War II pointed to the job training criterion as more discriminating and conducive to effective evaluation than job performance. The training is aimed at actual tasks of the job; it is normally conducted by noncommissioned officers (NCO's) with experience in the job, who train and supervise persons doing the job. Evaluation of the performance of trainees is a normal part of the trainer's operation. Such evaluation is feasible because a class of trainees starts together and their progress relative to each other can be judged. In contrast, a group of soldiers starting on the job following completion of

training normally becomes widely scattered, often with as many different supervisors as there are individuals in the group. The problem of different scaling values applied by different raters is involved, as well as the problem of the rater's not having a range of performance at this experience level to use as a basis for ratings. Other problems often encountered in on-job studies include poor opportunity for supervisors to evaluate the job performance of their subordinates, pressures incident to administrative actions tied to official job ratings, and wide variance in tasks actually performed under the same job title.

Research Model

The design of the present analysis was influenced by the 1970 Supreme Court decision in the case of Griggs v. Duke Power and subsequent related decisions, as well as the Equal Employment Opportunity Commission Guidelines. The first step is to see if differences exist between racial groups in aptitude area scores. If so, the second step is to look at the magnitude of the validity coefficients (correlation between aptitude area scores and counterpart training performance evaluations) to see if they are large enough to justify use of the aptitude area scores. If so, the final step is to see if the relation between scores on an aptitude area and evaluations in training for counterpart jobs is reasonably colinear across racial groups.

The first step indicates whether or not use of the scores comes under the scope of the Supreme Court decision. The second step indicates whether or not test-score effectiveness meets the Court's "touchstone of business necessity," that is, whether the scores are valid enough to justify their use in identifying more effective personnel. The third step examines the question of whether the test scores have equal meaning for different races. Of course, management interests dictate concern for the second and third steps, regardless of the first step.

Data

Data used as the basis for developing the new aptitude area composites proved to be the best available for the key elements of the present analysis (Maier & Fuchs, 1972b). Test scores were obtained on some 25,000 young men entering training in over 100 Army Military Occupational Specialty (MOS) or job training programs in 1964 and 1965. On completion of the training, the final course grades, along with indications of academic turnbacks and failures, were collected. The predictor variables for this analysis were the aptitude area scores listed in Table 2. The criterion variables were the final course grades in the training for the counterpart groups of Army jobs shown in Table 2. The control variable was race, which proved to show significant frequencies only for whites and blacks.

Table 2

Aptitude Areas and Related Army Jobs

Aptitude area		Composite ACB tests	Major related jobs
Symbol	Title		
CO	Combat	AR+TI+PA+AD+CC	Infantry, Armor, Combat Engineer
FA	Field Artillery	AR+GI+MK+EI+CA	Field Cannon and Rocket Artillery
EL	Electronics Repair	AR+EI+MC+TI+CE	Missiles Repair, Air Defense Repair, Tactical Electronics Repair, Fixed Plant Communication Repair
OF	Operators and Food	GI+AI+CA	Missiles Crewman, Air Defense Crewman, Driver, Food Services
SC	Surveillance and Communications	AR+WK+MC+PA	Target Acquisition and Combat Surveillance, Communication Operations
MM	Mechanical Maintenance	MK+AI+EI+TI+CM	Mechanical and Air Maintenance, Rails
GM	General Maintenance	AR+SK+AI+MC	Construction and Utilities, Chemical, Marine, Petroleum
CL	Clerical	AR+WK+AD+CA	Administrative, Finance, Supply
ST	Skilled Technical	AR+MK+SK	Medical, Military Police, Intelligence, Data Processing, Air Control, Topography and Printing, Information, and Audio Visual
GT	General	AR+WK	Used only to qualify for special tests, as Officer Candidate Test

In the original validation study, it was possible to compute correlation coefficients in each sample and to work with such coefficients in consolidating sample statistics within an MOS group. It was thus possible to develop the most valid composites by calculations using correlation coefficients rather than raw data. However, for evaluating specific groups of individuals, it was necessary to combine data within an MOS group. Each MOS group was composed of several MOS samples, but the final course grades from different MOS samples were not comparable and hence could not be combined directly. It was assumed that the mean and variability of final course grades reflected the judgmental set of the trainer staff. Thus, for each MOS sample, the final course grades were standardized to have a mean of 100 and a standard deviation of 20. The aptitude area predictor scores were transformed to deviation scores with a mean of 100, but the standard deviations were left as observed in each MOS sample. The standard deviations of the aptitude area scores were not standardized, because in subsequent analyses their covariances were used in correcting validity coefficients in each MOS group for restriction in range. The cases with adjusted final course grades and aptitude area scores were then consolidated by MOS group for analysis. The racial breakouts were later identified as individuals with these modified--and, it is hoped, more realistic--data.

Analysis

From the almost 21,000 cases used in the analysis, which developed the current ACB and aptitude areas (4,000 cases were lost from the original 25,000 because criterion data were not available), racial identification as white or black was obtained for approximately 14,000 men. For these cases the adjusted final course grades and scores on the aptitude area of selection were computed as described above. These data form the basis for the analysis reported later for the third step. However, the first step required all aptitude area scores for representative racial groups. The new aptitude area system had been introduced in 1973, and those scores were collected for Army accessions during part of September 1973. At that time there was no draft, but the Army was making strong recruiting efforts to meet its requirements for qualified personnel to meet numerous projected vacancies. This sample, then, does not include those who failed the screening, and it probably underrepresents the very highly qualified groups geared to college and graduate school or managerial training. Nevertheless, these factors are not likely to significantly alter the general nature of the overlap in distributions and the differences in means found in this large sample. The sample of almost 7,500 cases covers all parts of the United States, and results should be unbiased in their broader impact.

Table 3 shows mean scores on all the aptitude areas for this whole sample as well as separately for whites and blacks. These scores are on a scale that attempts to place the population mean at 100 and the standard deviation at 20 for each aptitude area. Note, however, that the standard

deviations for blacks and whites in any one MOS group such as Combat are different from the population value of 20 because of sampling variability and restriction in range. It is evident from Table 3 that in each area the mean scores for whites are significantly higher than those for blacks, the differences running one-third to one-half a standard deviation. This result repeats a type of finding from other military and civilian investigations. It shows, basically, the problem of poorer educational and cultural facilities available to many segments of the black population. The comparison of aptitude area mean scores finds discrimination to the extent that scores for blacks average lower than those for whites (although the actual distributions are characterized by major overlapping of scores). This result answers the first step and calls for analysis of the second step in our model.

Table 3

Aptitude Area Mean Scores of Whites and Blacks in 1973 Input Sample

Aptitude area	Whites	Blacks	Total
CO Combat	106	90	100
FA Field Artillery	100	88	96
EL Electronics Repair	105	95	101
OF Operators and Food	99	82	92
SC Surveillance and Communications	106	97	103
MM Mechanical Maintenance	101	85	95
GM General Maintenance	104	89	99
CL Clerical	106	100	103
ST Skilled Technical	104	92	100
Sample size	4,756	2,697	7,482

The critical information required for the second step was reported in Maier and Fuchs (1972a) and is reproduced here as Table 4. This represents best estimates of the correlation of the aptitude area scores with performance in training for counterpart Army jobs for the population of young men of draft age. In effect, these ratios show the gain in standard score on the criterion of job training performance with unit gain in standard score on the counterpart aptitude area. These nine coefficients, with six around .70, and even respectable values of .45 for Operators and Food, .53 for Combat, and .61 for Field Artillery aptitude areas, are high enough to indicate substantial relationships. Because the men studied were in the relevant job training programs and hence had almost all qualified on the counterpart aptitude areas, these coefficients had been corrected for

restriction in range to represent the broader population of young men. These validity coefficients are unusually high, matching the best of those obtained for academic programs. This finding gives a favorable result from the second step and calls for the third step analysis in our model.

Table 4

Validity of Aptitude Areas for Counterpart Army Jobs

Aptitude area	Validity
CO (Combat)	.53
FA (Field Artillery)	.61
EL (Electronics Repair)	.73
OF (Operators and Food)	.45
SC (Surveillance and Communications)	.69
MM (Mechanical Maintenance)	.74
GM (General Maintenance)	.68
CL (Clerical)	.68
ST (Skilled Technical)	.69

Note: From Maier & Fuchs, 1972a.

The third step concerns the relevance of the aptitude area scores for separate racial groups. As stated above, data on almost 21,000 men were used in the validation study to develop the aptitude area composites. Slightly over 14,000 of these men were identified by race, essentially all as white or black. Table 5 shows the distributions of the total validation sample and of the whites and blacks in the sample by MOS training group. The noticeable variations in proportion of the validation sample identified by race are in Operators and Food (a high proportion) and in the Combat and Field Artillery (a low proportion). The numbers available in Field Artillery are especially disappointing; to avoid giving undue weight to such small samples, this MOS group was not analyzed further.

For the remaining eight MOS groups, the mean aptitude area scores of whites and blacks in MOS training and their mean final course grades are shown in Table 6. Although the mean aptitude scores and course grades of whites are higher than those for blacks, most differences in course grades are generally those to be expected from the regression effects. The regression effects indicated by the validity coefficients shown in Table 4 provide an expectation that the difference in means for an aptitude area

should be accompanied by a smaller difference in final course grade means. Actually, most of the differences in final course grade means are within one point of the product of the difference in aptitude area score means multiplied by the validity coefficient. This is not to argue that refined statistical tests would satisfy a null hypothesis--such review would most likely find differences of statistical significance for these large samples. What is presented here is a sense of practical significance of the data. We still have two differences of note. The Combat group final course grades of the blacks are practically up to those of the whites, although because of regression we would expect a difference of about five points. In contrast, the Skilled Technical group final course grades of the blacks are depressed by about two points below expectation. Thus, this review suggests that the comparison of means for whites and blacks is reassuring for six of the areas but that another look at the Combat and Skilled Technical areas may be helpful.

Table 5

Sample Sizes in Aptitude Area Validation and Racial Studies

MOS group	Sample size			
	Validation	White	Black	W&B
Combat	1,609	581	131	712
Field Artillery	665	134	41	175
Electronics Repair	3,840	2,036	232	2,268
Operators and Food	1,516	1,166	179	1,345
Surveillance and Communications	2,137	1,243	148	1,391
Mechanical Maintenance	4,395	2,776	266	3,042
General Maintenance	1,139	688	76	764
Clerical	3,502	2,232	446	2,678
Skilled Technical	2,175	1,499	253	1,752
Total	20,978	12,355	1,772	14,127

A more pragmatic test of the relevance of the aptitude area scores for whites and blacks is a review of the regression lines of MOS course grades on aptitude area scores for both racial groups. An aptitude area score of 90 is the common minimum for acceptance for training in a counterpart MOS, although 100 has often been the minimum for acceptance for the more advanced or difficult MOS. Similarly, scores of 110 or 120 mark their holders as highly promising students with high likelihood of becoming honor graduates. Hence, these four aptitude score levels were selected for observation of predicted course grades of whites and blacks. For each

MOS group, the regression equations or prediction equations of course grades at successive aptitude scores were plotted separately for white and black samples. From these equations the course grades expected at the four aptitude scores of 90, 100, 110, and 120 were noted. The results are presented in Table 7.

Table 6

Mean Aptitude Area Scores and Final Course Grades of Whites and Blacks by MOS Group

MOS group	Aptitude area score		Final course grade	
	Whites	Blacks	Whites	Blacks
Combat	101.5	92.1	100.2	99.4
Electronics Repair	100.9	91.1	100.7	94.1
Operators and Food	101.0	94.0	100.5	97.1
Surveillance and Communications	100.4	89.9	100.8	93.3
Mechanical Maintenance	100.9	90.0	100.8	92.0
General Maintenance	101.5	89.6	100.6	93.6
Clerical	101.2	94.0	101.8	96.2
Skilled Technical	101.6	90.7	101.4	92.0

Scales for both aptitude scores and course grades are based on means of 100 and standard deviations of 20 for the full population of young men. The overriding impact of the entries in Table 7 is that predicted final course grades for whites and blacks are amazingly uniform within an aptitude area score level in an MOS group. Differences of 0, 1, or 2 points predominate. Slightly larger differences are found in the Combat MOS group where blacks with Combat aptitude area scores of 90 or 100 did a bit better, and in Mechanical Maintenance and Skilled Technical MOS groups where whites with Mechanical Maintenance or Skilled Technical scores of 110 or 120 (respectively) did a bit better.

As a check on the results presented in Table 7, which are based on data corrected for restriction in range, the data on available cases (as shown in Table 5) were also reviewed. As indicated earlier, the data have been adjusted to put information on trainees in different MOS programs within the same MOS group on a common scale. In this analysis, these adjusted data were examined for whites and blacks to plot course grade means for clusters of trainees at successive intervals of aptitude scores and then to roughly fit straight-line trends to the sets of observed means. Figure 1 presents these plots of the mean trends for whites and blacks, with regression lines representing the results from the earlier

Table 7

Final Course Grades for Given Aptitude Area Scores from Regression Lines for Whites and Blacks

MOS group	Final course grade for aptitude area score of							
	90		100		110		120	
	Whites	Blacks	Whites	Blacks	Whites	Blacks	Whites	Blacks
Combat	94	98	99	102	105	107	110	111
Electronics Repair	92	93	100	100	108	107	116	114
Operators and Food	96	96	100	99	104	102	108	105
Surveillance and Communication	92	94	100	101	108	108	116	115
Mechanical Maintenance	91	92	100	99	109	106	118	113
General Maintenance	93	94	100	101	107	108	114	115
Clerical	92	92	100	100	108	108	116	116
Skilled Technical	93	92	100	97	107	102	114	107

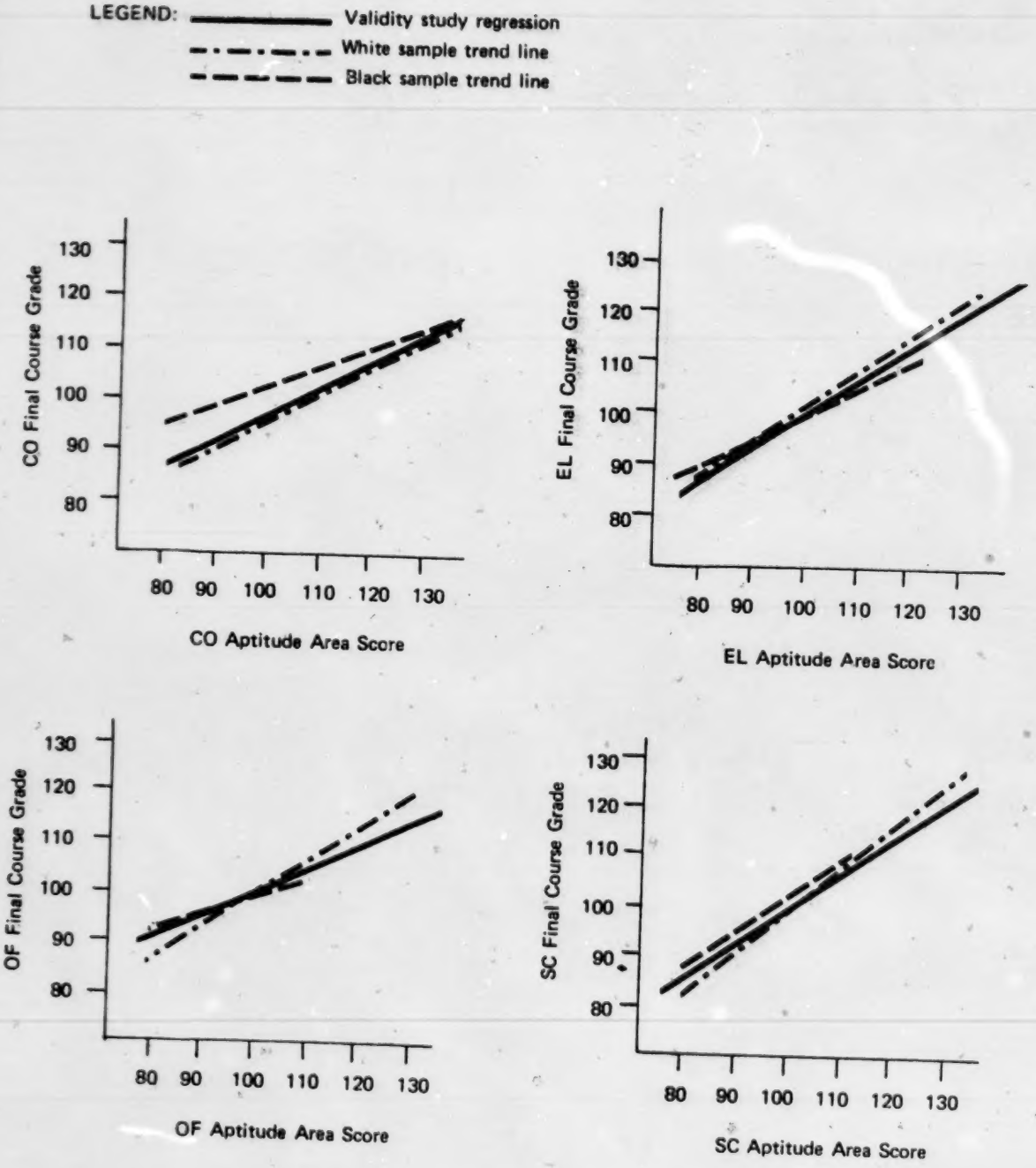

Figure 1. Comparative trends of course grades of whites and blacks for aptitude scores.

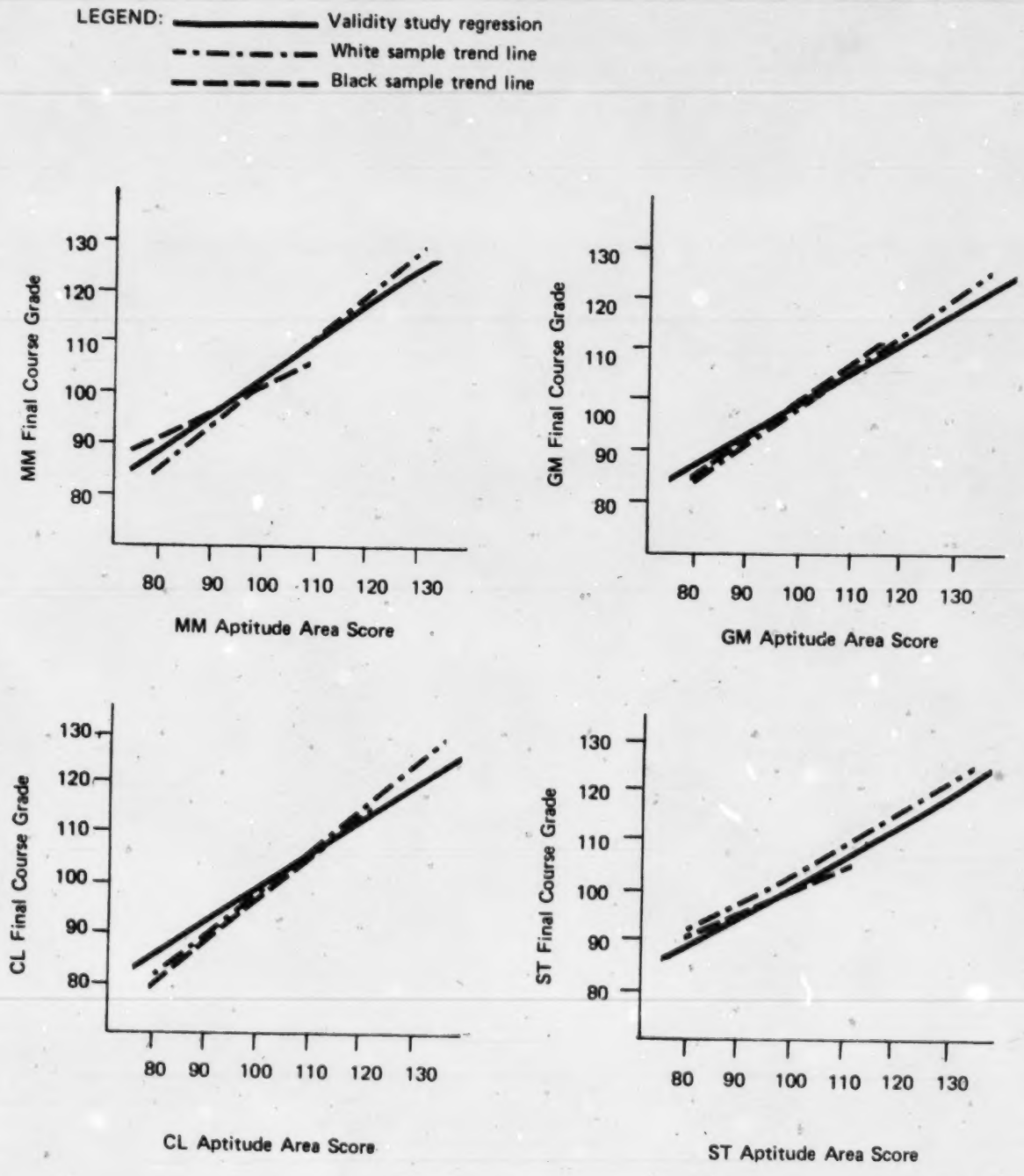

Figure 1 (cont'd). Comparative trends of course grades of whites and blacks for aptitude scores.

validity study as a reference. In this figure, the race trend lines are shown only for the score intervals with sufficient numbers of cases. For this reason, many of the trend lines for blacks do not extend above the 110 aptitude score level.

The regression lines from the validation study and the trend lines from the samples of whites and blacks show remarkable agreement on the plots in Figure 1. Differences are generally small and variable as to which group outperforms the other at a given aptitude level. These results reinforce the computed values from Table 7, indicating that in a practical sense the aptitude area scores are equally useful for predicting job training performance of whites and blacks. Note that in Table 7 the linear regression lines were extended to a score of 120, even though few cases were available in the 110-120 range.

DISCUSSION

Results of this analysis provide rather straightforward answers to questions raised by the model. Comparison of aptitude area scores of samples of white and black young men shows sizable differences in means of the two races. High validity is shown in the validity coefficients of the aptitude areas for predicting counterpart job training performance, clearly justifying the "touchstone of business necessity" cited by the Supreme Court. Finally, comparison of the regression of job training performance on counterpart aptitude area scores indicates that regression from the validation study and from samples of whites and blacks shows no differences of practical significance within the critical range (although there probably are statistically significant differences in the regression lines).

The results of this research are consistent with results found by other researchers in both the civilian and military communities. Cleary (1968) found no evidence of differences in the prediction of black and white grades at three colleges when the Scholastic Aptitude Test was used as a predictor. Similar findings were reported by Pfeifer and Sedlacek (1970) at the University of Maryland. Campbell and his associates (1973) at the Education Testing Service reported on a 6-year study of workers in selected U.S. Civil Service occupations as showing that "regression equations developed on majority group data appeared to predict almost equally well for minority groups." O'Leary, Farr, and Bartlett (1970) studied predictor-criterion relations in several job situations, and found that aptitude tests were as likely to favor whites as blacks. Guinn, Tupes, and Alley (1970), working with Air Force enlisted men, found that the performance of blacks in technical schools tended to be slightly overpredicted by aptitude-criterion prediction equations. Their observed differences were not consistent in direction or magnitude across the different technical school courses and hence did not consistently favor either race. Thomas (1972) studied a large sample of Navy trainees and found some statistically significant differences in the regression

equations relating black and white course grades with performance on aptitude tests. She observed a slight tendency for overprediction of black performance along with slightly lower accuracy of prediction.

The present analysis used job training performance as the criterion; such a criterion has been challenged in some equal opportunity cases. However, in these cases a key element has been the absence of failure in training or other active use of the training evaluation. In the Army situation, many students do not graduate; and at the other end of the scale, honor graduates are often given early promotion or other rewards for their superior performance in job training.

In the present research, about one-quarter of the trainees did not graduate on schedule. Most of these were academic failures or academic turnbacks, for whom the application of training evaluations was clearly significant. Also, "voluntary" withdrawals are often at least partly motivated by difficulties encountered in maintaining passing grades. It is therefore felt that the job training criterion used here can be defended as applicable to equal opportunity questions. However, careful research should be undertaken to relate job training performance to subsequent on-the-job performance. A major effort would be needed to avoid the difficulties cited in the "PROBLEM" section of this report. Certainly, a special criterion measure would be needed, with standard tasks and multiple judges, or an objective job sample test, or both.

Another factor is time. The primary data were collected in 1964-1965. This period may actually have been more "normal" than the later sixties, when the Army was heavily involved in Southeast Asia. However, with the end of the draft (and combat involvement), the mid-1970's may well be the start of a new era for the Army. Recruitment standards will react to the size of replacement needs, on the one hand, and to effects of the economy on the quality of applicants, on the other hand. The quantity and quality of education available to various groups in our society will place its mark on what differences are found in the regression lines for current racial samples. It seems highly desirable that the Army update the present findings on a current sample of trainees.

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29